



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/575,887

08/15/2006

Reinhard Heine

016906-0500

4686

22428 7590 05/24/2010
FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

RUBY, TRAVIS C

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

05/24/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,887	Applicant(s) HEINE, REINHARD	
	Examiner TRAVIS RUBY	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/14/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3744

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore,

- a. an abutment of Claim 1;
- b. the additional heat exchanger being solely secured to the primary heat exchanger of Claim 2;
- c. the rib having the same wall thickness as the framework of Claim 10;
- d. the fixed and loose bearings of Claim 19;
- e. the motor vehicle framework of Claim 26;

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the

Art Unit: 3744

drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. The claims are objected to because they include reference characters which are not enclosed within parentheses.

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m).

Claim 9 recites "depth X" and "maximum X1".

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 3744

6. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance:

- f. Claim 2 recites the broad recitation "arrangement used for securing a fan frame and/or additional heat exchanger to a heat exchanger", and the claim also recites "in particular as claimed in Claim 1" which is the narrower statement of the range/limitation.
- g. Claim 5 recites the broad recitation "two headers are arranged", and the claim also recites "in particular on opposite sides of the heat exchanger" which is the narrower statement of the range/limitation.
- h. Claim 6 recites the broad recitation "an additional rib of the fan frame is arranged between the two headers of the heat exchanger", and the claim also recites "in particular in an edge region of the fan frame" which is the narrower statement of the range/limitation.

Art Unit: 3744

- i. Claim 21 recites the broad recitation “the supporting means of the heat exchanger and the supporting device of the fan frame and/or of the additional heat exchangers are arranged in a common securing region and, in particular, are integrated in one another”, and the claim also recites “in particular are integrated in one another” which is the narrower statement of the range/limitation.
 - j. Claim 22 recites the broad recitation “are arranged in the adjacent region of the supporting means”, and the claim also recites “in particular form the common securing regions” which is the narrower statement of the range/limitation.
 - k. Claim 23 recites the broad recitation “coolant cooler”, and the claim also recites “in particular for motor vehicles” which is the narrower statement of the range/limitation.
 - l. Claim 26 recites the broad recitation “a fan frame”, and the claim also recites “in particular for an arrangement as claimed in claim 1” which is the narrower statement of the range/limitation.
7. Regarding claims 1, 2, 14-17, and 22 the word “means” is preceded by the word(s) “holding” in an attempt to use a “means” clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding “means,” it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).
8. Regarding claims 1, 2, 14-17, and 26, the word “means” is preceded by the word(s) “securing” in an attempt to use a “means” clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s)

Art Unit: 3744

preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

9. Regarding claims 2, 13, 21, and 22 the word "means" is preceded by the word(s) "supporting" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

10. Regarding claims 22 the word "means" is preceded by the word(s) "fastening" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

11. Claim 1 recites "one additional rib" in line 4, rendering it confusing as how there can be an additional rib with no primary rib being first recited.

12. Claim 1 recites "with one another" in line 5. It is not apparent to which structure the limitation is referring to rendering the claim indefinite.

13. Claim 2 recites "a fan frame" in line 1. It is not clear as how this fan frame relates to the fan frame recited in Claim 1.

14. Claims 2-6, 8, 11, 14, 15, 21, and 23 recites "the heat exchanger" multiple times. It is not clear whether this is referring to the primary heat exchanger that the fan frame is mounted to or the additional heat exchanger that is attached to the fan frame. Some designation, such as "first",

Art Unit: 3744

"primary", or similar words should be used to clarify which heat exchanger the applicant is referring to in the claims.

15. Claim 2 appears to be written as an independent claim, but has dependency from claim 1, making it a dependent claim with improper antecedent basis. Clarification of the claim language is required to prevent indefiniteness.

16. Claims 3-27 have improper claim dependency. It appears in the amendment that the applicant rushed through the claim dependency numbering and made all dependent claims depend from Claim 1; which is improper since most of the dependent claims depend from Claim 2 and other dependent claim as multiple dependents. Correction of the claim dependency is required in order to ascertain the required limitations of the claimed invention. For example, Claim 3 recites "claim 1, wherein the fan frame and/or additional heat exchangers". Claim 1 does not recite an additional heat exchanger, while Claim 2 does. In addition, the applicant has numerous "lack of antecedent basis" issues throughout all of the dependent claims because of the improper dependency, which need to be corrected to satisfy 35 USC 112 2nd paragraph.

17. Claim 5 recites "on opposite sides of the heat exchanger" in line 3. It is not clear if this limitation is referring to the front and back of the heat exchanger or the left and right side of the heat exchanger.

18. Claim 9 recites "X1" in line 3. It is not clear what this reference is referring to.

19. Claims 2, 14, and 15 recite multiple alternatives that render the claim confusing as to what the applicant actually regards as their invention since it is not readily apparent which combination of alternatives is the claimed invention.

Art Unit: 3744

20. Claim 19 recites "a fixed bearing" and "a loose bearing". In light of the specification and drawings, it is not readily apparent what structure that this is referring too since no bearing is shown in any of the drawings, and these terms are not defined definitely in the specification.

21. Claim 21 recites "in one another" in line 4. It is not clear to which structure of the limitation that this is referring to, rendering the claim indefinite.

Claim Rejections - 35 USC § 102

22. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

23. Claims 1-14 and 21-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Mahe (FR2778975, as cited by applicant).

Re Claim 1. Mahe teaches an arrangement used for securing a fan frame (ref 14) to a heat exchanger (ref 10), the heat exchanger having at least one header (ref 18,20) with holding means (ref 58,60) and the fan frame having a framework (ref 62) with securing means (ref 54, 56) and with at least one additional rib (ref 66) for stiffening, the holding means of the header being in operative contact with one another by the securing means of the framework (abstract, Figure 1-3).

Art Unit: 3744

Re Claim 2. Mahe teaches the arrangement used for securing a fan frame (ref 14) and/or additional heat exchangers (ref 12) to a heat exchanger (ref 10), in particular as claimed in claim 1, the heat exchanger having at least one header (ref 18,20) with holding means (ref 74, 76, 58, 60) and supporting means (ref 78, 80) for a support of the heat exchanger (ref 10) on an abutment, and the fan frame (ref 14) and/or the additional heat exchangers (ref 12) having at least one supporting device (ref 40, 42) for supporting the fan frame and/or the additional heat exchangers on the abutment and securing means, the holding means (ref 74, 76) of the heat exchanger and the securing means (ref 66, 72) of the fan frame and/or of the additional heat exchangers being in operative contact with one another (abstract, Figures 1-3).

Re Claim 3. Mahe teaches wherein the fan frame (ref 14) and/or the additional heat exchangers are secured solely to the header or headers (ref 18, 20) of the heat exchanger (Figure 1 and 2).

Re Claim 4. Mahe teaches wherein the header (ref 18, 20) is arranged laterally on the heat exchanger (ref 10), and the securing means are arranged laterally on the fan frame and/or the additional heat exchanger (Figure 1-3).

Re Claim 5. Mahe teaches wherein the heat exchanger has two headers (ref 18, 20) which are arranged, in particular, on opposite sides of the heat exchanger (Figure 1-3).

Art Unit: 3744

Re Claim 6. Mahe teaches wherein an additional rib (ref 66) of the fan frame is arranged between two headers of the heat exchanger, in particular in an edge region of the fan frame (Figure 1-3).

Re Claim 7. Mahe teaches wherein the additional rib (ref 66) has a length which corresponds to the distance between two headers (Figure 1).

Re Claim 8. Mahe teaches wherein an additional rib has a depth which corresponds approximately to the depth of the tube/rib block of the heat exchanger (Figure 1-2 shows the rib extending across the depth of the heat exchanger).

Re Claim 9. Mahe teaches wherein the depth X of an additional rib is variable along the rib and has a maximum X1 at mid-length (Figure 1-2, the rib is narrow at the edges and widens as it progresses towards the middle of the fan frame).

Re Claim 10. Mahe teaches wherein the additional rib has essentially the same wall thickness as the framework of the fan frame (Figure 1-3; The rib and fan frame are integral and made of the same material, so they would have the same thickness as illustrated in Figure 3).

Re Claim 11. Mahe teaches wherein one or more additional ribs, cover a tube/rib block of the heat exchanger (Figure 1-3 shows the rib covering the heat exchanger tube block).

Art Unit: 3744

Re Claim 12. Mahe teaches wherein the fan frame is produced as a plastic part and the additional rib can be injection-molded onto the framework (Figure 1-3; The rib and frame are one integral part).

Re Claim 13. Mahe teaches wherein the supporting means (ref 78, 80) comprise a securing tenon (Figure 1-3).

Re Claim 14. Mahe teaches wherein the securing means of the fan frame and/or of the additional heat exchangers can be inserted and/or latched into the holding means of the header or the holding means of the header can be inserted and/or latched into the securing means of the fan frame and/or of the additional heat exchangers (Figure 1-3; This is intended use of how to assemble the structure, of which the Mahe reference is capable of performing).

Re Claim 21. Mahe teaches wherein the supporting means of the heat exchanger and the supporting device of the fan frame and/or of the additional heat exchangers are arranged in a common securing region and, in particular, are integrated in one another (Figure 1-3).

Re Claim 22. Mahe teaches wherein the fastening means of the fan frame and the holding means of the header are arranged in the adjacent region of the supporting means and, in particular, form the common securing regions (Figure 1-3).

Art Unit: 3744

Re Claim 23. Mahe teaches wherein the heat exchanger is a coolant cooler, in particular for motor vehicles (abstract, Figure 1-3).

Re Claim 24. Mahe teaches wherein the coolant cooler is part of a cooling module for a motor vehicle (abstract, Figure 1-3).

Re Claim 25. Mahe teaches wherein the abutment is part of a motor vehicle framework (abstract, Figure 1-3; Since the supporting means are for mounting the heat exchanger in a vehicle, then the abutment must be a part of the motor vehicle framework).

Re Claim 26. Mahe teaches a fan frame (ref 14), in particular for an arrangement as claimed in claim 1, which has a framework (ref 62) with securing means (ref 54, 56) and at least one additional rib (abstract, Figures 1-3).

Re Claim 27. Mahe teaches the fan frame is characterized by an approximately rectangular horizontal projection (Figure 1-3).

Claim Rejections - 35 USC § 103

24. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3744

25. Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mahe (FR2778975, as cited by applicant) in view of Gassmann (FR2808870, as cited by applicant).

Re Claim 15. Mahe fails to teach wherein the holding means on one header are designed as holders with insertion orifices and on another header as snap hooks and in that the securing means on the fan frame are designed on one side as insertion tabs and on the opposite side as securing tabs with latching orifices, and in that the fan frame can be inserted with the insertion tabs into the holders can subsequently be folded and can be latched by means of the snap hooks and the securing tabs.

Gassmann teaches the holding means on one header (ref 5) are designed as holders with insertion orifices (ref 10, 11) and on another header (ref 6) as snap hooks (ref 31, 14) and in that the securing means on the fan frame are designed on one side as insertion tabs and on the opposite side as securing tabs with latching orifices (abstract Figures 1-5), and in that the fan frame (ref 2) can be inserted with the insertion tabs into the holders can subsequently be folded and can be latched by means of the snap hooks and the securing tabs (abstract, Figures 5).

In view of Gassmann's teachings, it would have been obvious to one of ordinary skill in the art to modify the fasteners of Mahe to be snap hooks and insertion orifices as they are art recognized equivalents of securing two objects together. In addition, it would have been obvious to use the fasteners of Gassmann as it allows for easy installation of the fan frame next to the heat exchanger.

Art Unit: 3744

Re Claim 16. Mahe fails to teach the securing means are designed as tabs of the fan frame and the holding means on the header are designed as snap hooks.

Gassmann teaches the securing means are designed as tabs (ref 11) of the fan frame and the holding means on the header are designed as snap hooks (ref 31 and 14) (Figure 1-5, abstract).

In view of Gassmann's teachings, it would have been obvious to one of ordinary skill in the art to modify the fasteners of Mahe to be snap hooks and insertion orifices as they are art recognized equivalents of securing two objects together. In addition, it would have been obvious to use the fasteners of Gassmann as it allows for easy installation of the fan frame next to the heat exchanger. It would have been obvious to one of ordinary skill in the art at the time the invention was made to locate the snap hooks on the header instead of on the fan frame as shown in Gassmann, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Re Claim 17. Mahe fails to teach that the securing means of the fan frame are designed as ribbed feet injection-molded onto the framework in the lower region, and in that the holding means on the header are designed as reception orifices and in that the feet can be pushed into the reception orifices.

Gassmann teaches the securing means of the fan frame are designed as ribbed feet (ref 27, 28, 29) injection-molded onto the framework in the lower region, and in that the holding means on the header are designed as reception orifices (ref 10) and in that the feet can be pushed into the reception orifices (Figure 1-5, abstract).

Art Unit: 3744

In view of Gassmann's teachings, it would have been obvious to one of ordinary skill in the art to modify the fasteners of Mahe to be ribbed feet and insertion orifices as they are art recognized equivalents of securing two objects together. In addition, it would have been obvious to use the fasteners of Gassmann as it allows for easy installation of the fan frame next to the heat exchanger.

Re Claim 18. Mahe fails to teach that the snap hooks are arranged on the feet and edges are arranged on the reception orifices and in that the snap hooks can be latched with the edges.

Gassmann teaches that the snap hooks (ref 31) are arranged on the feet (ref 35) and edges are arranged on the reception orifices (ref 14) and in that the snap hooks can be latched with the edges (Figure 1-5, abstract).

In view of Gassmann's teachings, it would have been obvious to one of ordinary skill in the art to modify the fasteners of Mahe to be snap hooks and insertion orifices as they are art recognized equivalents of securing two objects together. In addition, it would have been obvious to use the fasteners of Gassmann as it allows for easy installation of the fan frame next to the heat exchanger.

Re Claim 19. Mahe fails to teach that the foot with the reception orifice is designed as a fixed bearing and the foot with the reception orifice is designed as a loose bearing.

Gassmann teaches that the foot with the reception orifice (ref 10) is designed as a fixed bearing and the foot with the reception orifice (ref 31) is designed as a loose bearing (Figure 1-5, abstract).

Art Unit: 3744

In view of Gassmann's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Mahe to have a fixed and loose bearing in the reception orifice as this allows for a better connection to be made between the fan frame and header, giving a stronger fan frame that reduces movement.

Re Claim 20. Mahe fails to teach that the securing tenons are arranged below the reception orifices.

Gassmann teaches that the securing tenons are arranged below the reception orifices (Figure 1-5, abstract).

In view of Gassmann's teachings, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Mahe to have securing tenons arranged below reception orifices as this would allow for a secure connection to be made between the two parts. It would have been obvious to one of ordinary skill in the art at the time the invention was made to locate the tenons below the reception orifices, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Heine (US6158500) teaches a heat exchanger arrangement that uses multiple types of fasteners to secure the two heat exchangers.

Art Unit: 3744

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRAVIS RUBY whose telephone number is (571)270-5760. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules or Cheryl Tyler can be reached on 571-272-6681 or 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Travis Ruby/
Examiner, Art Unit 3744

/Frantz F. Jules/
Supervisory Patent Examiner, Art Unit 3744